

Anticoagulants walk the line between clotting and bleeding risks

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Because major surgery increases the risk of venous thrombosis, patients are often treated with anticoagulant medications to prevent thrombosis after surgery. Anticoagulant prophylaxis, however, increases the risk of severe bleeding.

The international CLUE Working Group studied the risk of thrombosis and severe haemorrhage after urological cancer operations and other forms of urological surgery. The groups' two extensive systematic reviews and meta-analyses addressed both cancer and non-cancer surgery. The systematic review of urological cancer surgeries covered 71 studies that had reported on symptomatic post-surgery thrombosis or a major bleeding related to the surgery. The studies covered 14 different types of cancer surgery.

Results show that the risk of a post-surgery thrombosis remains at a consistent level for the first four weeks after an operation, while the major haemorrhage occurs primarily in the first several days after surgery and seldom thereafter. These observations are significant for the prevention of blood clots and major bleeds of surgical patients: they suggest that if one is going to administer prophylaxis, it should, because the period of maximum net benefit occurs from several days after surgery to four weeks, continue for four weeks.

In one example condition, the research showed that risk of symptomatic venous thrombosis (deep vein thrombosis or pulmonary embolus) was substantial after open or robotic-assisted cystectomy while risk of <u>major</u>



bleeding was not high.

"In such surgeries, the use of anticoagulant medication for four weeks after surgery, is clearly justified," states adjunct professor Kari Tikkinen from the Department of Urology, University of Helsinki and Helsinki University Central Hospital, who leads the CLUE Working Group.

Meanwhile, similar medications may not be beneficial in laparoscopic or robotic assisted prostate surgeries performed on <u>low-risk prostate cancer</u> patients, in which risk for venous thromboembolism are substantially lower.

The second systematic review examined 37 studies that focused on 11 different urological non-<u>cancer</u> surgeries. Based on the results, the use of thromboprophylaxis is justified among high-risk patients undergoing kidney transplant surgery, but in many other urological surgeries, the risk of <u>venous thrombosis</u> is low and the net benefit is likely negative – more harm than benefit.

Both articles also indicated that there is great variation in the use of thromboprophylaxis. This comes as no surprise to Tikkinen, who points out that no systematic reviews had thus far been conducted, and therefore there was insufficient data to create evidence-based guidelines.

"It was interesting to see that the risk of <u>thrombosis</u> remained roughly the same throughout the four weeks following surgery, while severe bleeds took place within days of <u>surgery</u>. At the moment, anticoagulant prophylaxis is overused in many procedures in which the risk of thromboembolism is low. On the other hand, in many high-risk procedures thromboprophylaxis is underused, in particular because treatment duration is insufficiently long," Tikkinen states.

More information: Kari A.O. Tikkinen et al. Procedure-specific



Risks of Thrombosis and Bleeding in Urological Non-cancer Surgery: Systematic Review and Meta-analysis, *European Urology* (2017). <u>DOI:</u> <u>10.1016/j.eururo.2017.02.025</u>

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